

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

GE HEALTHCARE BIO-SCIENCES AB, GE
HEALTHCARE BIO-SCIENCES
CORPORATION, and GENERAL ELECTRIC
COMPANY,

Plaintiffs,

v.

BIO-RAD LABORATORIES, INC.,

Defendant and Counterclaim Plaintiff

Civil Action No. 1:14-cv-07080-LTS

JURY TRIAL DEMANDED

**DECLARATION OF PROFESSOR PETER KINGET
IN OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION**

I, Peter Kinget, hereby declare as follows:

1. I am Professor of Electrical Engineering at Columbia University in New York City.
2. I submit this declaration in support of Bio-Rad's Opposition to GE's Motion for a Preliminary Injunction. If asked at hearings or trial, I am prepared to testify regarding the matters I discuss in this declaration.
3. I reserve the right to supplement or amend this declaration based on any new information that is relevant to my opinions.
4. I am being compensated for my work in this matter at the rate of \$500 per hour plus expenses. My compensation is in no way tied to the outcome of this matter.
5. I understand that GE has moved for a preliminary injunction enjoining Bio-Rad from selling its Next Generation Chromatography ("NGC") Systems on the grounds that such systems infringe the patent-in-suit, U.S. Patent No. 8,821,718 ("the '718 patent").

6. I have been asked by counsel for Bio-Rad to assess whether certain limitations of the claims of the '718 patent asserted in conjunction with GE's motion for preliminary injunction against Bio-Rad's NGC systems are present in the NGC systems.

I. PROFESSIONAL BACKGROUND

7. Attached as Exhibit 1 is my curriculum vitae which summarizes my background, credentials, and includes a list of my publications.

8. I have over 15 years of experience as an electrical and electronics engineer, researching and designing analog and RF integrated circuits with a particular focus on implementing communications, sensing and power management circuits in scaled technologies. My experience includes extensive work in both the private sector as well as academia.

9. In 1990, I received my undergraduate degree in electrical and mechanical engineering with an option in microelectronics from the Katholieke Universiteit Leuven in Belgium. I received my undergraduate degree "summa cum laude," which means I was ranked in the top 1% of about 350 graduating engineering students.

10. I received my Ph.D. in Electrical Engineering, also from the Katholieke Universiteit Leuven, in 1996. My doctoral thesis was titled "Analog VLSI integration of parallel signal processing systems" and focused on the design of analog integrated circuits optimized for the execution of sensor computation tasks. My Ph.D. was awarded "summa cum laude with congratulations of the jury," which means that my thesis was judged to be in the top 5% of all engineering Ph.D. theses.

11. From 1996 to 1999, I was employed by Bell Laboratories (part of Lucent Technologies) in Murray Hill, NJ as a Member of the Technical Staff in the Design Principles Department. While at Bell Labs, my research focused on designing circuits for communication applications, including wireless applications.

12. From 1999 to 2002, I held various technical and management positions in IC design at Broadcom Corp. in Irvine, CA, Celight Inc. in Iselin, NJ and Multilink Corp. in Somerset, NJ. While at Broadcom, I was part of a team that designed an IC that realized a full cable modem RF front end on a single CMOS IC. This became a successful product in the market. Celight was a start-up company focused on developing novel optical communication equipment, and I was the Director of VLSI focusing on the design of very high-speed analog and digital circuits. At Multilink, I worked on IC for wired communications in high-end communication equipment.

13. In July 2002, I joined the faculty of Columbia University in New York City as an Associate Professor in the Department of Electrical Engineering. In July 2011, I was promoted to full Professor. In 2011, I was also named a Fellow of the IEEE "for contributions to analog and radio frequency integrated circuits." The IEEE Grade of Fellow is conferred upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year does not exceed one-tenth of one percent of the Institute membership.

14. While at Columbia, my research interests have included: 1) design of analog and RF integrated circuits in nano-scale CMOS technologies; 2) design of ultra-low voltage and ultra-low power analog and RF circuits; 3) efficient implementation of novel wireless communication systems; and 4) design of highly efficient power conversion systems.

15. In addition to my research, at Columbia I have taught both undergraduate and graduate level electrical engineering courses on a variety of topics, including Advanced Analog Integrated Circuits and Advanced Communication Circuits. While at Columbia, I have also advised 12 completed Ph.D. theses, and I am advising 10 Ph.D. theses in progress as well as

numerous masters and undergraduate research projects.

16. I have authored over 150 refereed journal articles and refereed conference proceedings, and several of these articles and journal proceedings have received awards. I also served as the Associate Editor of the IEEE Journal of Solid-State Circuits from 2003 to 2007 and as the Associate Editor of the IEEE Journal on Circuits and Systems II from 2008 to 2009.

17. In performing my analysis, I have reviewed GE's complaint against Bio-Rad, GE's Motion For A Preliminary Injunction ("Motion"), and declarations and exhibits submitted in support of that Motion, the '718 patent, the '718 patent file history including references cited therein, the transcript of Dr. Scandella's October 17, 2014 deposition, and the transcript of Mr. Lundkvist's October 22, 2014 deposition. I have also reviewed additional non-public and publicly available documents discussed in this declaration. The materials I have considered in preparation of this declaration are referenced in the body or exhibits of this declaration and in Exhibit 2.

18. In addition to my review of documents listed above, I have relied on my training and experience working in the area of electrical engineering to arrive at my opinion.

19. My opinion is that GE has not shown that the NGC systems meet the limitation: "a panel member arranged to separate the fluidics section from the non fluidics section and for attachment of the modular component to a component position of the liquid handling panel."

20. My further opinion is that GE has not shown that the NGC systems meet the limitation: "the two or more component positions of the liquid handling panel are arranged for attachment of the panel members such that said respective fluidics sections are external to the housing and said respective non fluidics sections are internal to the housing."

II. LEGAL STANDARDS

21. I understand that assessment of infringement is a two-step process. First, the

language of the patent claims must be construed by the Court. Second, the claims as construed are applied to the accused product or process to determine whether the accused product or process meets each and every limitation of the claim as construed by the Court. I understand that when interpreting the claims of a patent, the Court first looks at the intrinsic evidence in the following order: the plain claim language, the specification, and the prosecution history. The specification and prosecution history often can inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention. Extrinsic evidence can also be relevant in determining the meaning of the claims.

22. I understand that the claims should be construed from the standpoint of a hypothetical person of ordinary skill in the art as of the invention date of the asserted patent. I understand that the following factors are relevant to determining the level of ordinary skill in the art: (a) type of problems encountered in the art, (b) prior art solutions to those problems, (c) rapidity with which innovations are made, (d) sophistication of the technology, and (e) educational level of active workers in the field. (*Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696, 218 USPQ 865, 868 (Fed. Cir. 1983).)

23. I understand that one of the inventors of the '718 patent, Mats Lundkvist, had a bachelor's degree in mechanical engineering and 9 years of experience designing liquid chromatography systems by 2009, the priority date of the '718 patent.

24. Having considered this information, and the other relevant factors, in my opinion, a person of ordinary skill in the art at the time of the invention of the '718 patent would have a bachelor's degree in mechanical engineering, bioengineering, chemical engineering, or electrical engineering and three years of fluid handling machine design experience, or would have an advanced degree in a similar field with at least one year of related design experience. I consider

myself to be at least of ordinary skill in electrical subsystems of the type used in fluid handling machines, and in fact am an expert with years of experience in the design of such electrical subsystems.

25. I understand that there are two types of infringement: literal infringement and infringement under the doctrine of equivalents ("DOE"). It is my understanding that to infringe a claim literally, an accused product or process must literally meet every limitation of the claim.

26. I understand that in order to succeed on a claim of infringement of a patent claim the patentee is required to prove infringement of every single limitation of the patent claim. I further understand that in order to succeed on a claim of infringement of a dependent claim, the patentee is required to prove infringement of every single limitation of the claim, plus every single limitation of the claim(s) on which the dependent claim depends. For example, if claim 2 is dependent on claim 1, in order to succeed on a claim of infringement of claim 2, the patentee must prove infringement of every single element of both claim 2 and claim 1.

27. Therefore, if the patentee fails to prove infringement on a single limitation of an independent claim, then the patentee will not succeed on any claim of infringement of that independent claim and all the claims that depend on that independent claim.

28. I understand that there are two ways of evaluating whether a requirement is present under the doctrine of equivalents. One test for equivalency is the "function-way-result" test, whereby the patentee may show an equivalent when the accused product or process performs substantially the same function, in substantially the same way, to achieve substantially the same result, as disclosed in the claim. Equivalency may also be proven where the differences between the invention as claimed and the accused product or process are insubstantial.

29. I am further informed that the same term used multiple times within a single claim

should be interpreted the same way.

III. GE'S ALLEGATIONS OF INFRINGEMENT

30. GE has alleged that Bio-Rad's NGC Systems infringe independent claims 1 and 16 and dependent claims 2, 3, 5, 11, 14, 17, and 18 of the '718 patent.

IV. OPINIONS

31. I have been asked to offer opinions on the following questions:

- the meaning of the terms "electronics" and "electrical components" in independent claims 1 and 16 to a person of ordinary skill in the art at the time of the invention of the '718 patent;
- whether the accused Bio-Rad NGC systems meet the following limitation of independent claims 1 and 16, and the dependent claims that depend from claims 1 and 16: "a panel member arranged to separate the fluidics section from the non fluidics section and for attachment of the modular component to a component position of the liquid handling panel";
- whether the accused Bio-Rad NGC systems meet the following limitation of independent claim 1 and the dependent claims that depend from claim 1: "wherein the two or more component positions of the liquid handling panel are arranged for attachment of the panel members such that said respective fluidics sections are external to the housing and said respective non fluidics sections are internal to the housing"; and
- whether the accused Bio-Rad NGC systems meet the following limitation of independent claim 16 and the dependent claims that depend from claim 16: "wherein the liquid handling panel of the housing and the panel members are arranged such that the fluidics sections are external to the housing and respective non fluidics sections are internal to the housing."

32. My opinions, set out in more detail below, are as follows:

- the plain meaning of electrical components and electronics includes electrical wires, electrical connections and contacts, and conductors. This plain meaning is fully supported by the specification and file history. (*See, e.g.*, '718 patent at 1:27-33; Ex. 3, '718 File History, at BRGE00000358, 429-30);
- this meaning is consistent with relevant dictionaries in the field at the time of the invention. One such dictionary defines "electronics" as "components and devices which conduct electrons, or other charge carriers such as electron holes or ions, through a vacuum, gas, or semiconductor."

(Ex. 4, *Wiley Electrical And Electronics Engineering Dictionary*, at BRGE00001632 (Steven M. Kaplan lexi, 2004)). The person of ordinary skill in the art would also understand "circuits" and "conductors" to be included in this definition.

- This dictionary also defines "electrical components" as: "electric elements that are a part of a circuit" (Ex. 4, *Wiley Electrical And Electronics Engineering Dictionary*, at BRGE00001617 (Steven M. Kaplan lexi, 2004));
- the accused Bio-Rad NGC systems do not meet the following limitation of independent claims 1 and 16, and the dependent claims that depend from claims 1 and 16: "a panel member arranged to separate the fluidics section from the non fluidics section and for attachment of the modular component to a component position of the liquid handling panel";
- the accused Bio-Rad NGC systems do not meet the following limitation of independent claim 1 and the dependent claims that depend from claim 1: "wherein the two or more component positions of the liquid handling panel are arranged for attachment of the panel members such that said respective fluidics sections are external to the housing and said respective non fluidics sections are internal to the housing"; and
- the accused Bio-Rad NGC systems do not meet the following limitation of independent claim 16 and the dependent claims that depend from claim 16: "wherein the liquid handling panel of the housing and the panel members are arranged such that the fluidics sections are external to the housing and respective non fluidics sections are internal to the housing."

A. "ELECTRONICS" AND "ELECTRICAL COMPONENTS"

33. Independent claims 1 and 16 of the '718 patent use the term "non fluidics section," described in these claims as "comprising electronics or electrical components or control means."

34. I further understand that the applicants for the '718 patent added the language "comprising electronics or electrical components or control means" to the claims during prosecution of the application that led to the '718 patent to overcome rejections of the claims by the United States Patent and Trademark Office ("USPTO"). (Ex. 3, '718 File History, at BRGE00000241, 244, 251.) I understand that the applicants added this language to define the "non fluidics section" more specifically to overcome prior art, in response, for example, to

comments from the examiner that "clarification of what the non-fluidic parts are can help to overturn the prior art rejection." (Ex. 3, '718 File History, at BRGE00000241, 244, 251.)

35. While I understand claim construction has not yet happened in this case, one of ordinary skill in the art would understand the terms "electronics" and "electrical components" as used in the claims to include electrical wires, electrical connections and contacts, and conductors. (Ex. 4, *Wiley Electrical And Electronics Engineering Dictionary*, at BRGE00001617, 1632 (Steven M. Kaplan lexi, 2004)).

36. "Electronics" include electrical connectors such as SMA connectors, wires such as transducer or RF wires, circuit boards, UV sensors, pH sensors, LEDs, and LED display screens. This meaning of the term "electronics" is consistent with and supported by the '718 patent specification and file history. (*See, e.g.*, '718 patent at 5:64-66; Ex. 3, '718 File History, at BRGE00000357.) The deposition testimony of Mr. Mats Lundkvist, an inventor of the '718 Patent, is also consistent with this definition of the term "electronics." (Ex. 5, 10/22/2014 Lundkvist Dep. Tr., at 41:6-18, 138:11-24, 143:3-145:12, 151:7-154:18, 158:16-160:16, 165:19-166:16)

37. "Electrical components" include components such as electrical connectors, wires, electrical switches, and motors. This meaning of the term "electrical components" is consistent with and supported by the '718 patent specification and file history. (*See, e.g.*, '718 patent at 6:14-21, 1:27-36; Ex. 3, '718 File History, at BRGE00000429, 437.) The deposition testimony of Mr. Mats Lundkvist, an inventor of the '718 Patent, is also consistent with this definition of the term "electrical components." (Ex. 5, 10/22/2014 Lundkvist Dep. Tr., at 102:25-104:4, 138:11-24, 139:25-141:10, 143:3-144:13-25, 160:17-161:19, 167:18-168:23.)

38. The meanings of these terms that I have proposed appear to be consistent with

various components that Dr. Scandella has identified as electronics and electrical components. (Ex. 6, 10/17/2014 Scandella Dep. Tr., at 19:14-22:13, 29:24-30:6, 33:11-21, 34:17-35:1, 36:17-22, 37:2-19, 52:22-53:5, 60:25-61:3; 65:2-5; 118:20-24; 146:4-5; 150:18-20; Scandella Decl. ¶¶ 39, 41.) Nonetheless, Dr. Scandella departed from these common definitions when he interpreted the requirements of the claims. Dr. Scandella attempted to draw a distinction among the various electronics or electrical components in Bio-Rad's NGC systems, arguing that certain electronics or electrical components were not "electronics" or "electrical components" for purposes of the claims because they were minor or non-essential electronics. (Ex. 6, 10/17/2014 Scandella Dep. Tr., at 19:14-22:13, 29:24-30:6, 33:11-21, 34:17-35:1, 36:17-22, 37:2-19, 52:22-53:5, 60:25-61:3; 65:2-5; 118:20-24; 146:4-5; 150:18-20; Scandella Decl. ¶¶ 39, 41.)

39.

40. I disagree with Dr. Scandella's opinion. In my opinion, components such as electric motors, pH sensors, SMA connectors, UV detectors, LEDs, display screens, RF wires, switches, and transducer wires are all electrical or electronic components and there is no justifiable basis for Dr. Scandella's effort to distinguish among them, as far as the meaning of the terms "electronics" or "electrical components" in the patent claims goes.

41. I understand that fluid flows between units on the user side of the NGC system as shown in Figure 1 below:

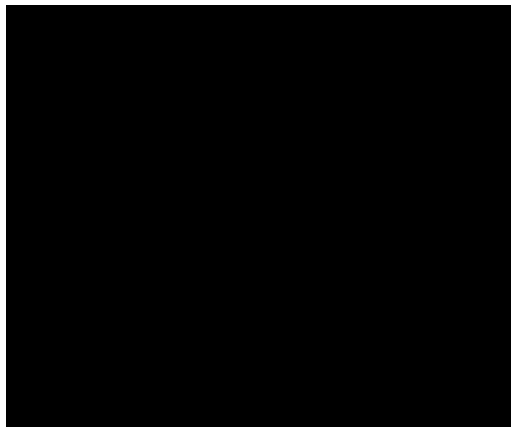


Figure 1

42. The units of the Bio-Rad NGC system that I evaluated all contain electronics or electrical components on the user side of the system, alongside fluidics components. For example, as shown in Figures 2 and 3 below, the pH valve unit contains various electrical components on the outside of the unit, alongside fluidics components. There is an electrical connector, known as an SMA connector (red arrow in Figure 2 below), to which the pH probe is connected, in order for the unit to function as a pH meter. The electrical connector and pH probe comprise electronics and electrical components located on the outside of the system, alongside fluidics components. A person of skill in the art would understand that pH probe, SMA connector, and the electrical connection between them are electrical components and electronics.

**Figure 2****Figure 3**

43. The Single Wavelength and Multi Wavelength detectors similarly contain electronics and electrical components outside the units alongside fluidics components. As shown in Figures 4 and 5 below, there are electrical connectors on the outside of the unit to which the conductivity cell plugs in. A person of ordinary skill in the art would view the conductivity cell and the electrical connector as electrical components and electronics.

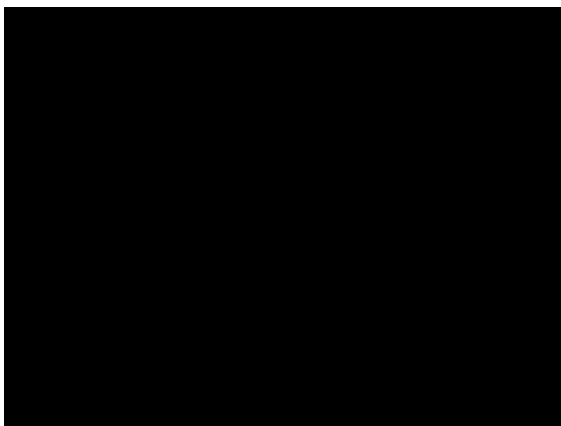


Figure 4

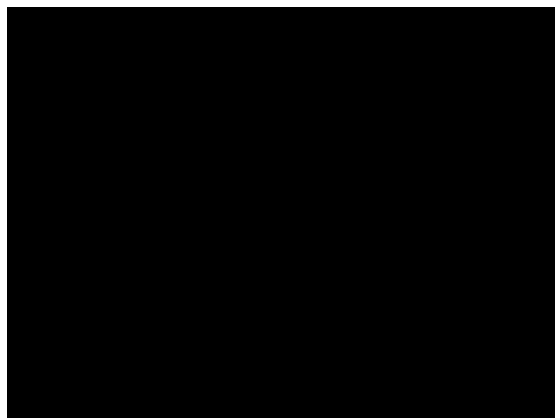


Figure 5

44. The Single Wavelength detector unit has additional electronics components on the outside alongside the fluidics components. As shown in Figures 6 and 7, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (Ex. 7,

BRGE00000785, at 795-796; Ex. 8, BRGE00002137, at 2339-2345.) A person of ordinary skill in the art would view the photodiode and the electrical connection between the UV optics block and RF wire as electronics and electrical components.

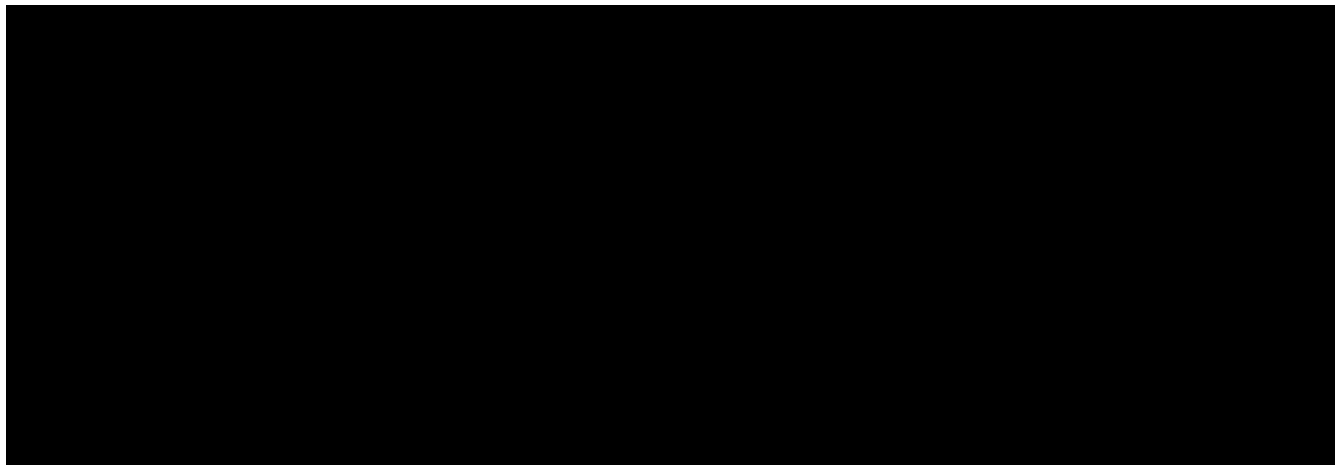


Figure 6

Figure 7

45. The mixer unit includes a motor on the outside, alongside the fluidics

components, that is an electrical component of the unit. As shown in Figure 8 below, there is an electrical wire that runs from the inside of the unit to the outside and connects to the motor, forming an electrical connection on the outside of the unit, alongside the fluidics components. A person of ordinary skill in the art would view the motor, the wire, and the connection between the motor and wire as electrical components.

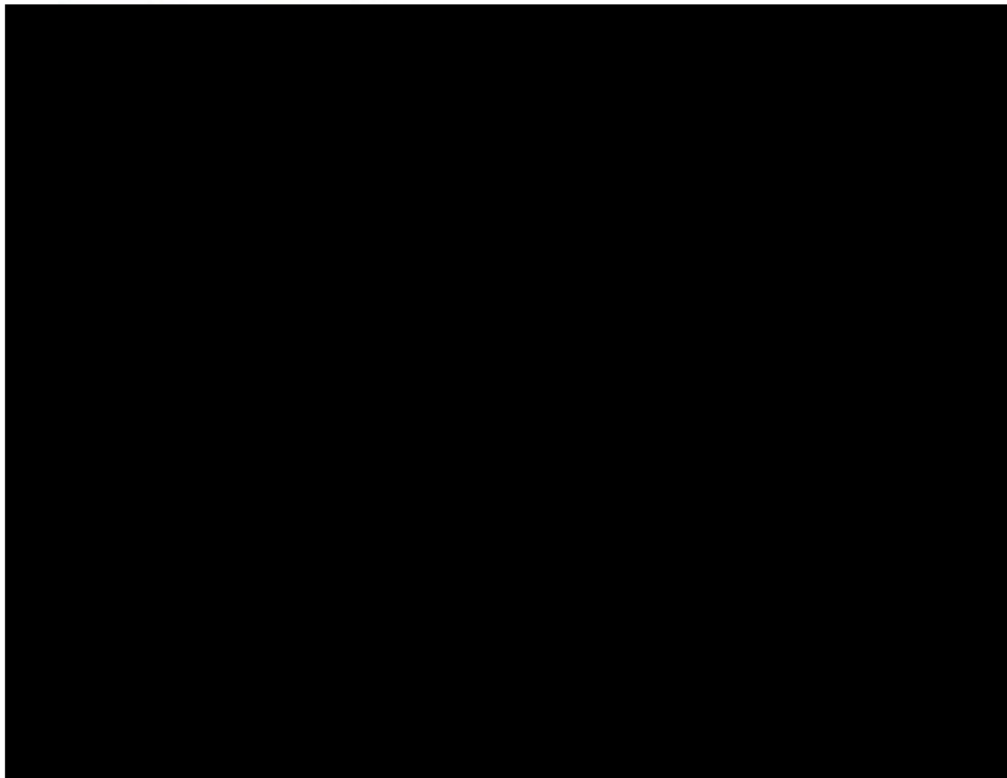


Figure 8

46. [REDACTED]

[REDACTED]

[REDACTED] These transducers are electrical connections used to monitor pressure. [REDACTED]

[REDACTED]

A person of ordinary skill in the art would view the pressure transducer, the wire, and the connection between the transducer and wire as electrical components.

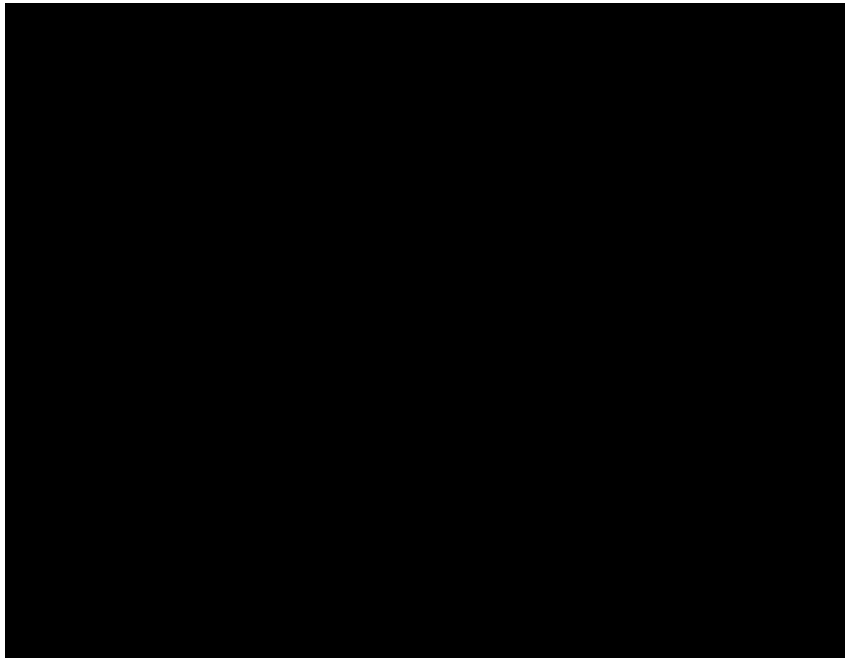


Figure 9

47. Every unit that I evaluated of the system contains LEDs. (Ex. 8, BRGE00002137, at 2217.) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] A person of ordinary skill in the art would view the LED lights as electronics components on the outside of the unit, alongside fluidics components.

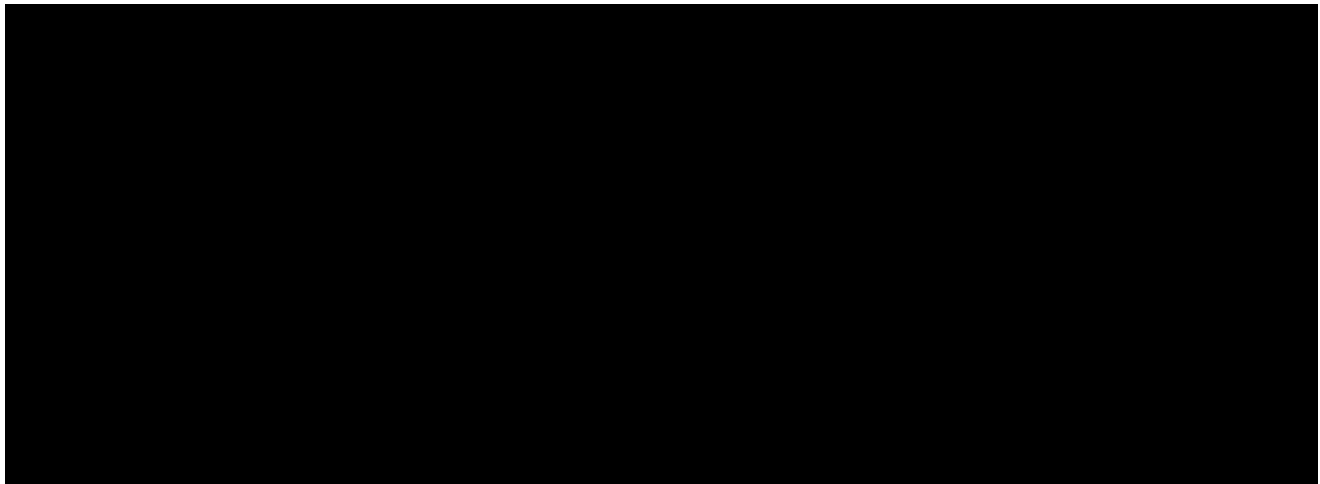


Figure 10

Figure 11

Figure 12

48. In addition, some units contain electrical switches and LED screens on the outside of the unit, alongside the fluidics components. As shown in Figures 13 and 14, the LED screens and switches (red arrow) are on the outside of the units. A person of ordinary skill in the art would view the LED screens as electronics, and the switches as electrical components.

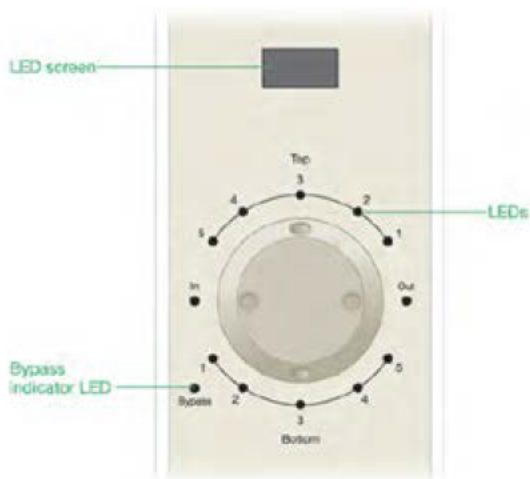


Figure 13



Figure 14

B. NON-INFRINGEMENT – "A PANEL MEMBER ARRANGED TO SEPARATE THE FLUIDICS SECTION FROM THE NON FLUIDICS SECTION AND FOR ATTACHMENT OF THE MODULAR COMPONENT TO A COMPONENT POSITION OF THE LIQUID HANDLING PANEL"

49. Independent claims 1 and 16 of the '718 patent both use the term "a panel member arranged to separate the fluidics section from the non fluidics section and for attachment of the modular component to a component position of the liquid handling panel."

50. While I understand claim construction has not yet happened in this case, one of ordinary skill in the art would understand the term "a panel member arranged to separate the fluidics section from the non fluidics section and for attachment of the modular component to a component position of the liquid handling panel" as used in the claims to mean that the electronics and electrical components are on one side of the panel and the fluidics are on the

other side of the panel. This meaning of the term is consistent with and supported by the '718 patent specification and file history. (*See, e.g.*, '718 Patent at Abstract, 2:23-31, 5:64-67, 6:10-21; Ex. 3, '718 File History, at BRGE00000251, 255, 357-358, 429, 437.) This meaning of the term is also consistent with the testimony of the inventor, Mr. Lundkvist. (Ex. 5, 10/22/2014 Lundkvist Dep. Tr., at 41:6-17; 138:141:10; 143:3-145:12; 153:3-154:13; 158:16-161:19; 164:22-165:9; 166:2-168:23.)

51. I understand that during prosecution of the application that issued as the '718 patent, the USPTO rejected the application over a number of different prior art references. (Ex. 3, '718 File History, at BRGE00000219-228, 321-333, 401-411.) I further understand that to overcome these rejections, the applicants amended the claims to add this specific limitation to independent claims 1 and 16. (Ex. 3, '718 File History, at BRGE00000349, 353.)

52. I further understand that during prosecution of the application that issued as the '718 patent, the applicants distinguished at least one prior art reference on the grounds, for example, that, in the prior art reference, "the fluidics and non fluidics (electronics etc) of the modules (fluid handling units) are not separated . . . as in presently claimed invention." (Ex. 3, '718 File History, at BRGE00000358.)

53. I further understand that during prosecution of the application that issued as the '718 patent, the applicants distinguished at least one prior art reference on the grounds, for example, that the prior art reference disclosed components such as a detector, "which is very likely to be electronic in nature and conductors which both appear to be next to liquid paths." (Ex. 3, '718 File History, at BRGE00000357.) In particular, this prior art detector module "illustrates that fluid and electrical parts are adjacent, not on either side of a panel." (Ex. 3, '718 File History, at BRGE00000358.)

54. I further understand that during prosecution of the application that issued as the '718 patent, the applicants distinguished at least one prior art reference on the grounds, for example, that the modules of the prior art system "do not separate their fluidics and electrical parts," but instead teach that "the fluid and non fluidic parts are together." (Ex. 3, '718 File History, at BRGE00000358.)

55. The person of ordinary skill in the art would further understand claims 1 and 16 to require the "panel" to be the component that attaches the modular component to the liquid handling panel, which I understand to refer to the front part of the system housing. This meaning of the term is consistent with and supported by the '718 patent specification and file history. (*See, e.g.*, '718 patent at 6:1-21; Ex. 3, '718 File History, at BRGE0000346, 349, 353, 382, 453.) This meaning of the term is also consistent with the testimony of the inventor, Mr. Lundkvist. (Ex. 5, 10/22/2014 Lundkvist Dep. Tr., at 41:6-17, 64:9-65:19, 72:7-21, 151:18-154:13, 158:4-161:19, 167:18-168:23, 172:4-14, 176:17-177:11, 187:12-188:4.)

56. As part of my evaluation of various units of the accused NGC system, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

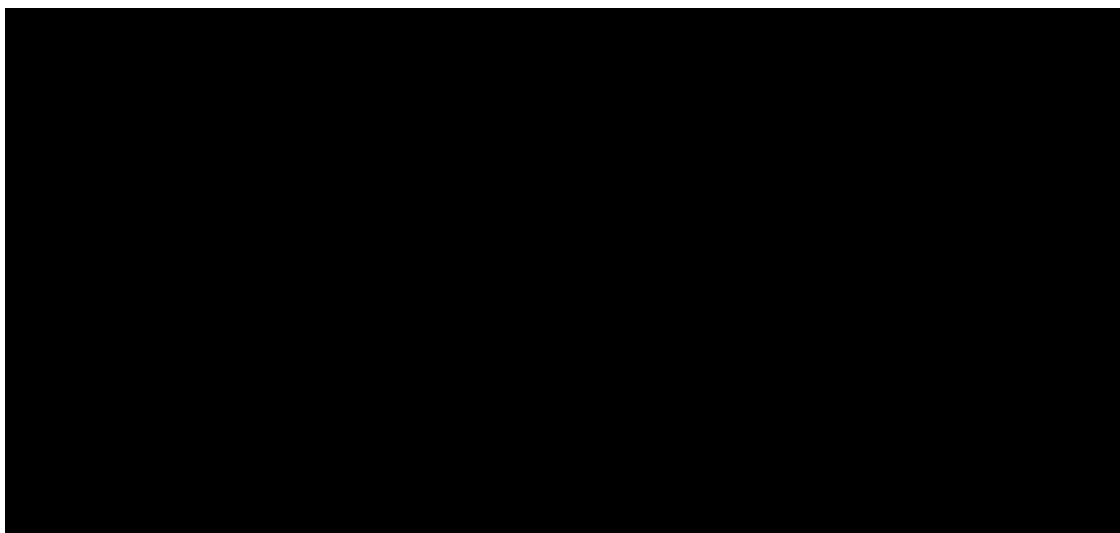


Figure 15

Figure 16

57. The units of the Bio-Rad NGC system also contain a component that for clarity, I will refer to as an [REDACTED], as shown below in Figure 17 (red arrow):

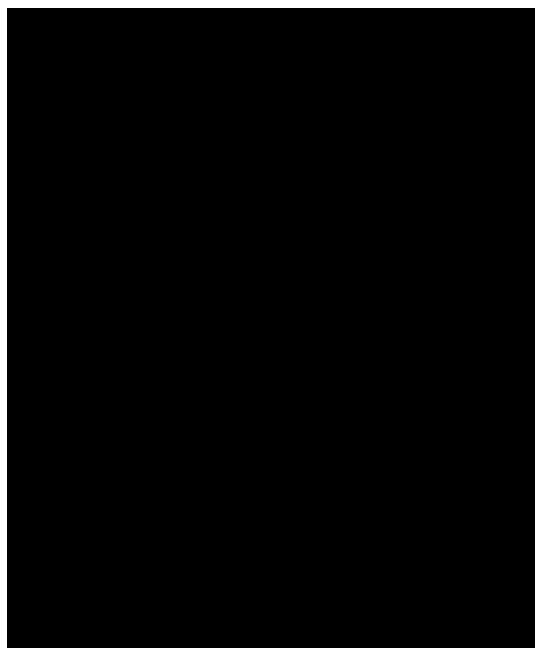


Figure 17

58. [REDACTED]

[REDACTED]

59. It is my opinion that, in the accused NGC systems, the [REDACTED] does not

separate the fluidics section from the non-fluidics section (comprising electronics and electrical components) of each unit. Instead, there are non-fluidics components on both sides of the [REDACTED]

60. As I discussed above, the pH valve unit includes an SMA connector (red arrow) and pH probe alongside the fluidics components on the outer side of the unit, facing the user. The SMA connector and the pH probe form an electrical connection alongside the fluidics components on this outer face of the system. [REDACTED]

[REDACTED] When the SMA connector is connected to the pH probe, as required for the unit to function, these components constitute electronic components on the outside of the system, alongside the fluidics. Therefore, in the pH valve unit, the [REDACTED] does not separate fluidics from non-fluidics and, in fact, there is no "panel member" that separates fluidics from non-fluidics.



Figure 18



Figure 19

61. The Single Wavelength Detector and Multi Wavelength Detector units similarly include electrical connectors alongside the fluidics on the side of the system facing the user. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

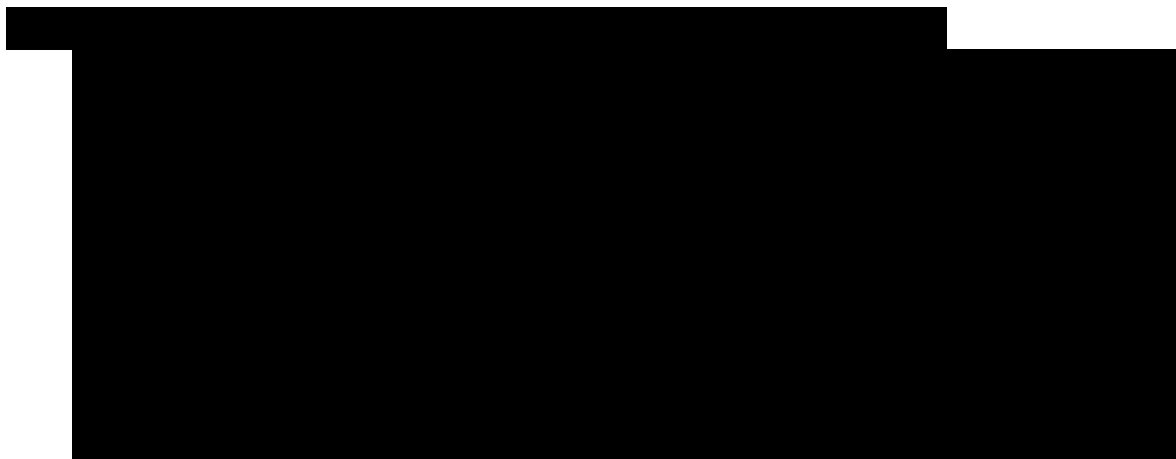


Figure 20

Figure 21

62. The Single Wavelength Detector unit

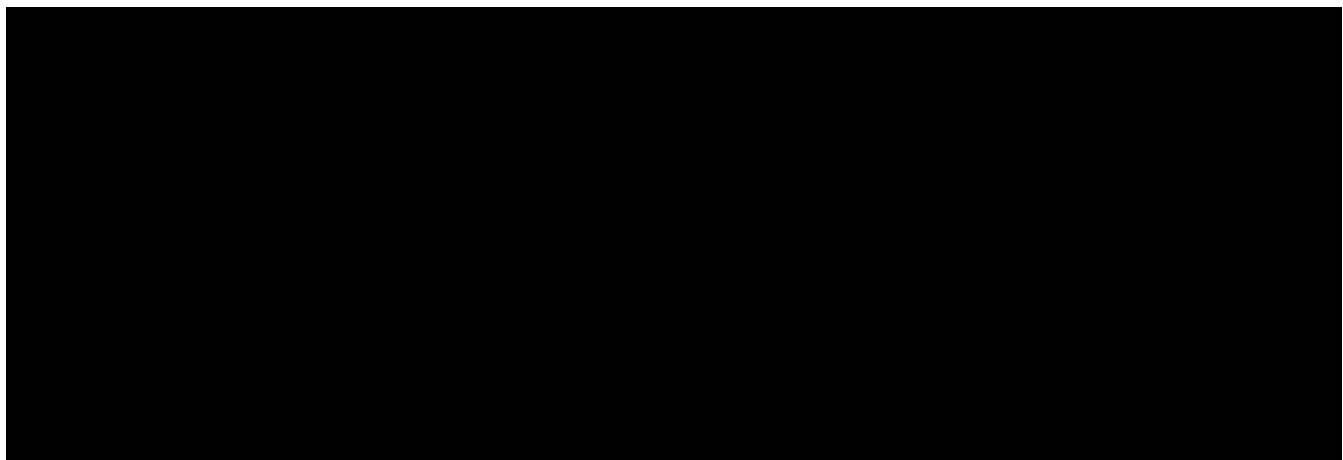


Figure 22

Figure 23

63.



is an electronic component side by side with fluidics on the same side of the

on this outer side of the unit. The Single Wavelength Detector unit also has an LED screen, an electronic component, on the side of the unit facing the user.

64. Therefore, in Single Wavelength Detector and Multi Wavelength Detector units, the [REDACTED] does not separate fluidics from non-fluidics and, in fact, there is no "panel member" that separates fluidics from non-fluidics.

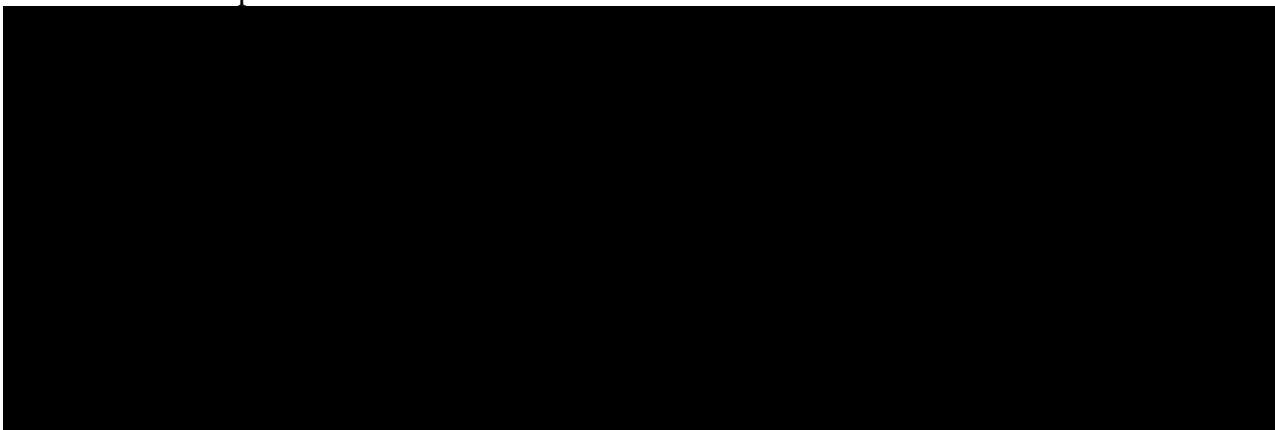


Figure 24

Figure 25

Figure 26

65. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This electrical connection is made side by side with the fluidics. Therefore, in the Sample Pump unit, the [REDACTED] does not separate fluidics from non-fluidics and, in fact, there is no "panel member" that separates fluidics from non-fluidics.

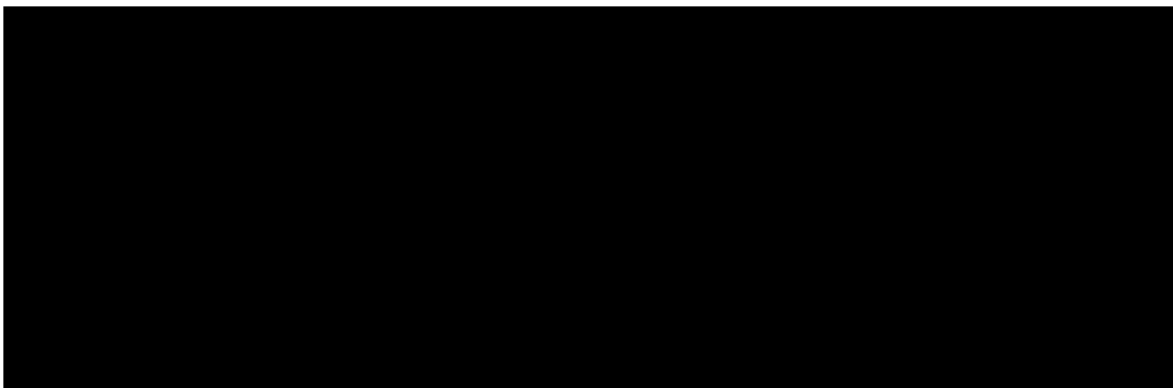


Figure 27

Figure 28

66. The Mixer unit similarly has electrical and electronic components on the side of the system that faces the user, alongside the fluidics components. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This electrical connection is made side by side with the fluidics, all on the same side of the [REDACTED]. Therefore, in the Mixer unit, the [REDACTED] does not separate fluidics from non-fluidics and, in fact, there is no "panel member" that separates fluidics from non-fluidics.

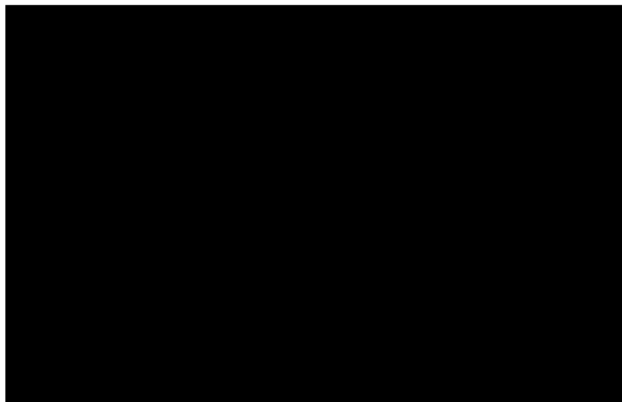


Figure 29

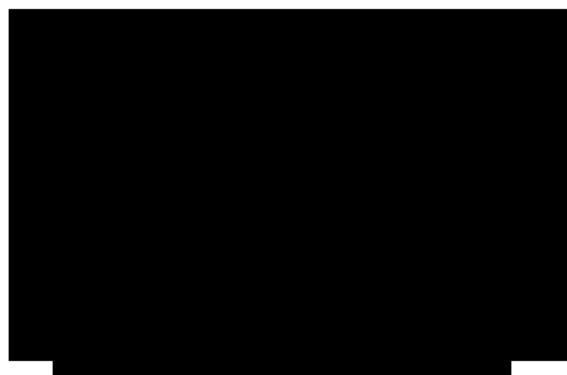


Figure 30

67. The "Buffer Blender valve," "Inlet Valve," "Outlet Valve," "Injection Valve," System Pump, Sample Pump, pH Valve, Blender, Column Switching, Mixer, Multi-Wavelength Detector, and Single Wavelength Detectors units all have LEDs. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Therefore, in the all of these units, the [REDACTED] does not separate fluidics from non-fluidics and, in fact, there is no "panel member" that separates fluidics from non-fluidics.

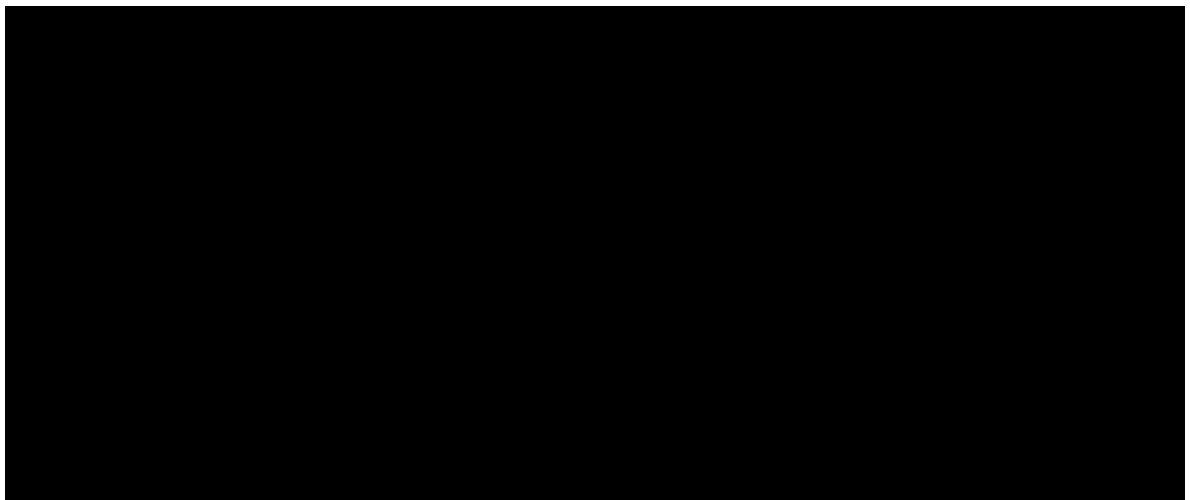


Figure 31

Figure 32

C. NON-INFRINGEMENT – "FLUIDICS SECTIONS ARE EXTERNAL TO THE HOUSING AND SAID RESPECTIVE NON FLUIDICS SECTIONS ARE INTERNAL TO THE HOUSING"

68. Independent claims 1 and 16 of the '718 patent both use the term "fluidics sections are external to the housing and said respective non fluidics sections are internal to the housing."

69. In claim 1, this term appears in the following claim element: "wherein the two or more component positions of the liquid handling panel are arranged for attachment of the panel members such that said respective fluidics sections are external to the housing and said respective non fluidics sections are internal to the housing."

70. In claim 16, this term appears in the following claim element: "wherein the liquid handling panel of the housing and the panel members are arranged such that the fluidics sections

are external to the housing and respective non fluidics sections are internal to the housing."

71. Although the language of this element of claim 1 is slightly different from the language of this element of claim 16, it is my opinion that the person of ordinary skill in the art would interpret them both to require the electronics and electrical components to be on the side of the panel interior to the housing, not on the side of the panel exterior to the housing, facing the user. The person of ordinary skill would further understand this term to require that the electronics and electrical components not be located alongside fluidics components, for example, on the outside of the housing facing the user. This meaning of this term is consistent with and supported by the '718 patent specification and file history. (*See, e.g.*, '718 patent at 6:14-21, 1:27-36; Ex. 3, '718 File History, at BRGE00000434.) This meaning of the term is also consistent with the testimony of the inventor, Mr. Lundkvist. (Ex. 5, 10/22/2014 Lundkvist Dep. Tr., at 151:18-154:13, 158:4-161:19, 167:18-168:23, 172:4-14, 176:17-177:11, 187:12-188:4.)

72. I understand that during prosecution of the application that issued as the '718 patent, the USPTO rejected the application over a number of different prior art references. (Ex. 3, '718 File History, at BRGE00000219-228, 321-333, 401-411.) I further understand that to overcome these rejections, the applicants amended the claims to add the specific language of these claim elements to independent claims 1 and 16. (Ex. 3, '718 File History, at BRGE00000349, 353)

73. I further understand that during prosecution of the application that issued as the '718 patent, the applicants distinguished at least one prior art reference on the grounds, for example, that, in the prior art reference, "respective non fluidics sections are not internal to any housing as claimed" in the '718 patent, because in this reference, there were electrical connections external to the system housing. (Ex. 3, '718 File History, at BRGE00000434.)

74. Based on my evaluation of various units of the Bio-Rad NGC system, it is my opinion that each unit has non-fluidics and fluidics components side by side on the outside of the system housing.

75. As I discussed above, the [REDACTED]
[REDACTED] The [REDACTED] therefore divides the unit into a section internal to the system housing, on the internal face of the [REDACTED] that faces the system housing, and a section external to the housing on the external face of the [REDACTED] that faces outwards away from the system housing towards the user.

76. As I discussed above, the pH valve unit includes an SMA connector and pH probe [REDACTED], the side facing away from the system housing to the user. When connected, the SMA connector and the pH probe form an electrical connection on the outside of the housing. [REDACTED]

[REDACTED] When the SMA connector is connected to the pH probe (Figure 34), as required for the unit to function, these components constitute electronic components external to the housing alongside the fluidics.

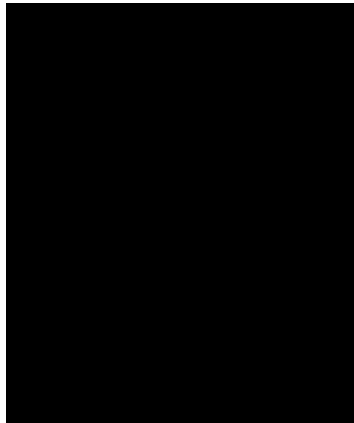


Figure 33



Figure 34

77. The Single Wavelength Detector and Multi Wavelength Detector units similarly include electrical connectors on the side of the [REDACTED] facing away from the system housing

to the user, alongside the fluidics. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

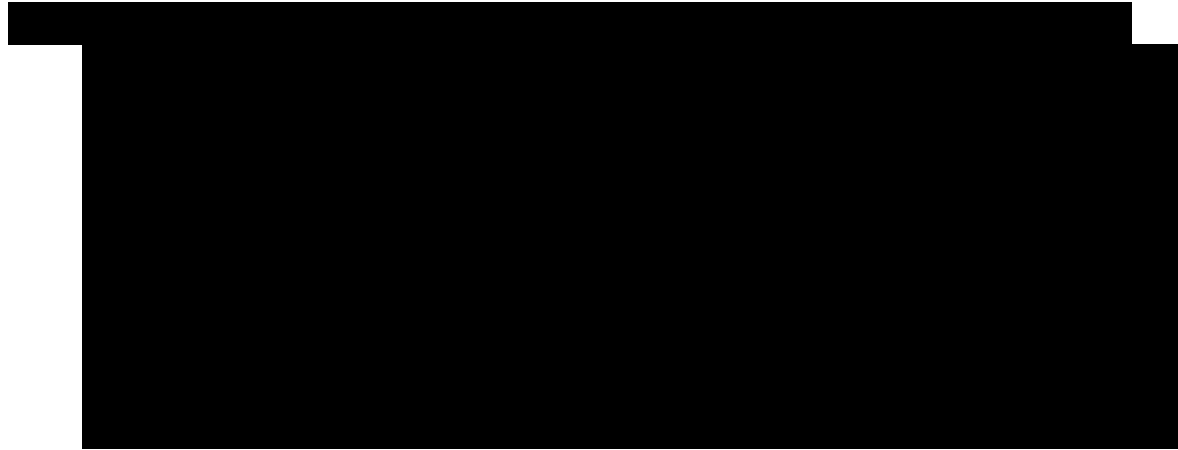


Figure 35

Figure 36

78. The Single Wavelength Detector unit [REDACTED]

[REDACTED]

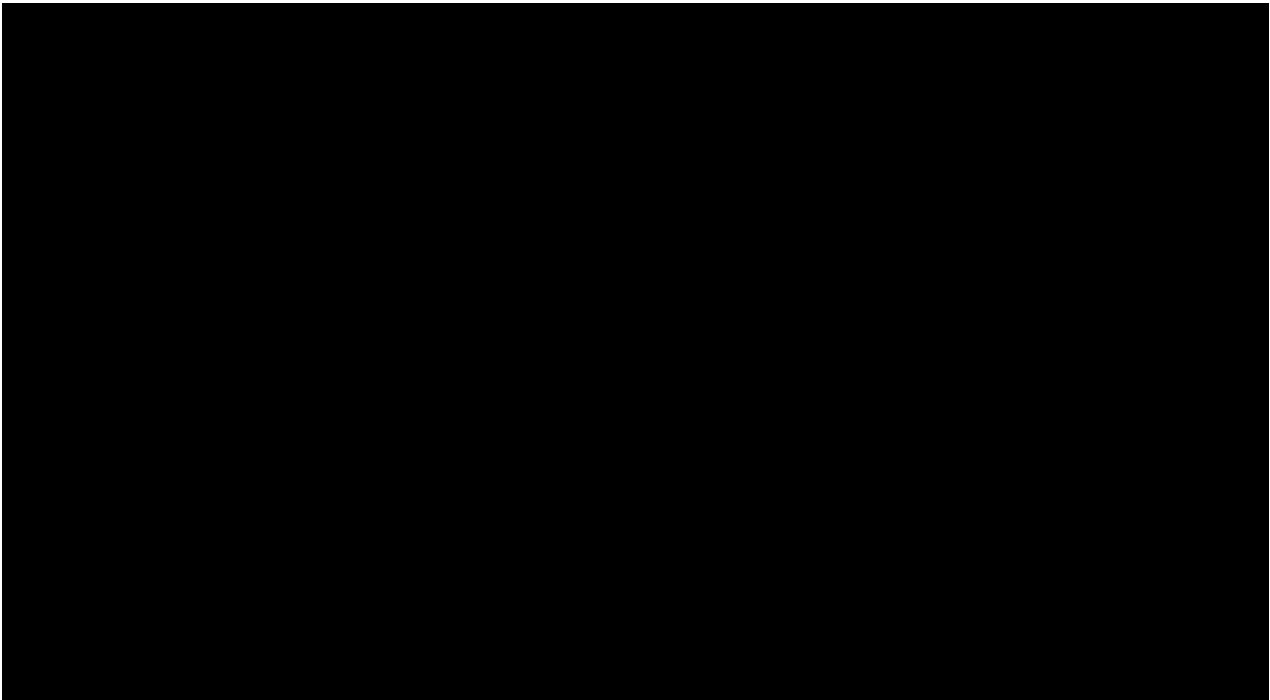
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



79. [Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

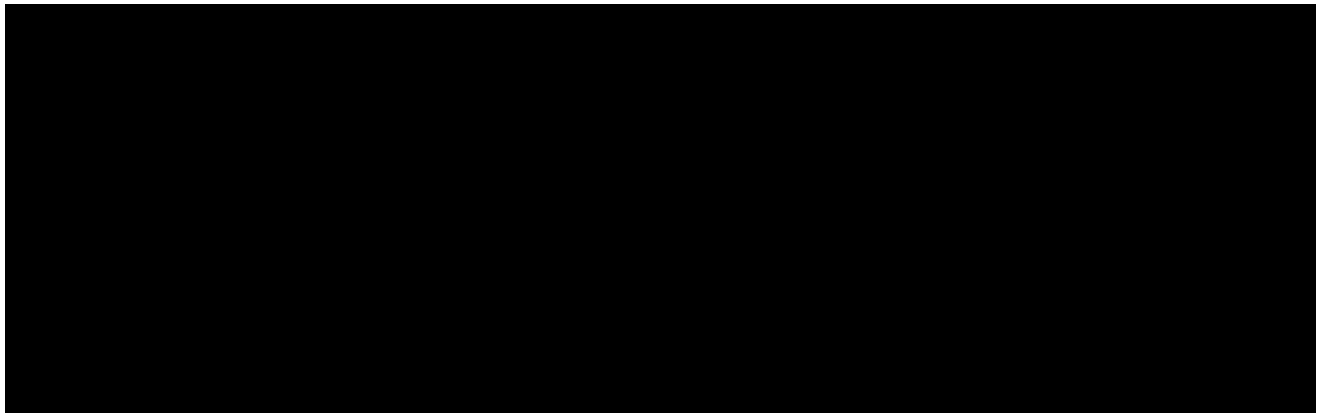


Figure 38

Figure 39

Figure 40

80. The Sample Pump unit includes a pressure transducer [Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]. This electrical connection is made side by side with the fluidics outside of the system housing.

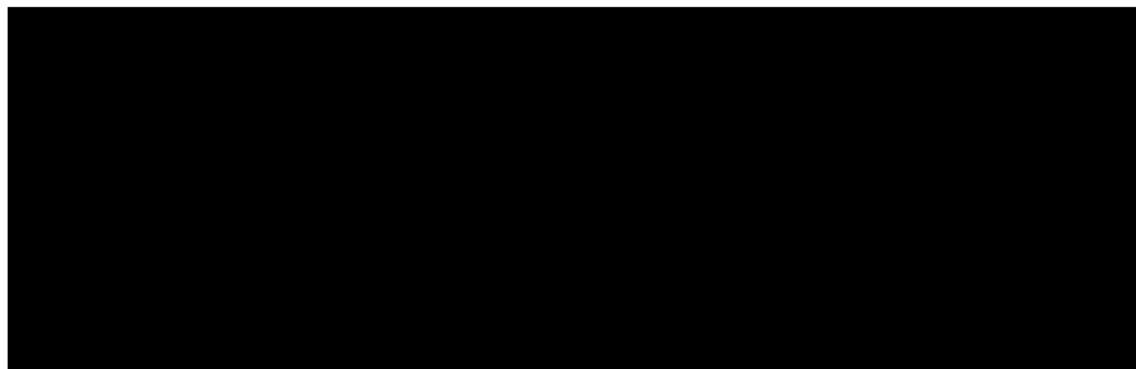


Figure 41

Figure 42

81. The Mixer unit similarly has electrical and electronic components on the outside of the system housing. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

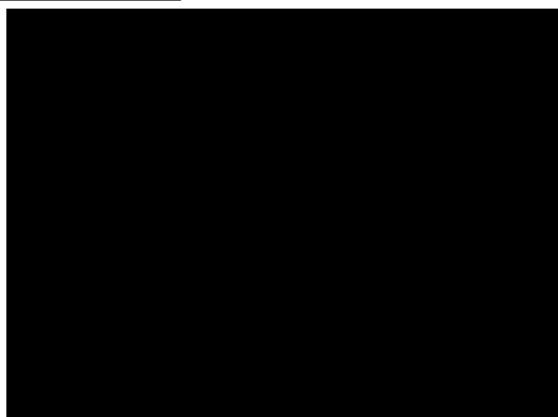


Figure 43

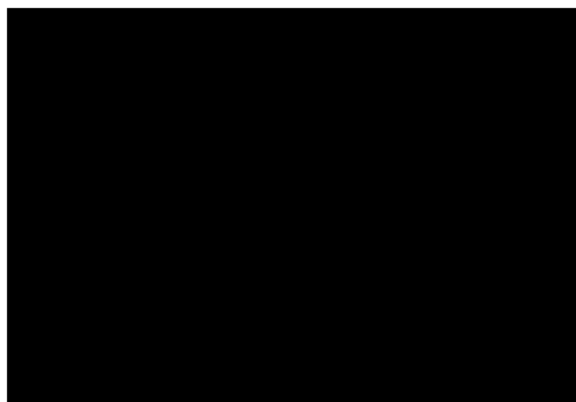


Figure 44

82. The Sample Pump and the System Pump units have electronic switches on the outer side of the unit, facing the user. These switches are external to the system housing because

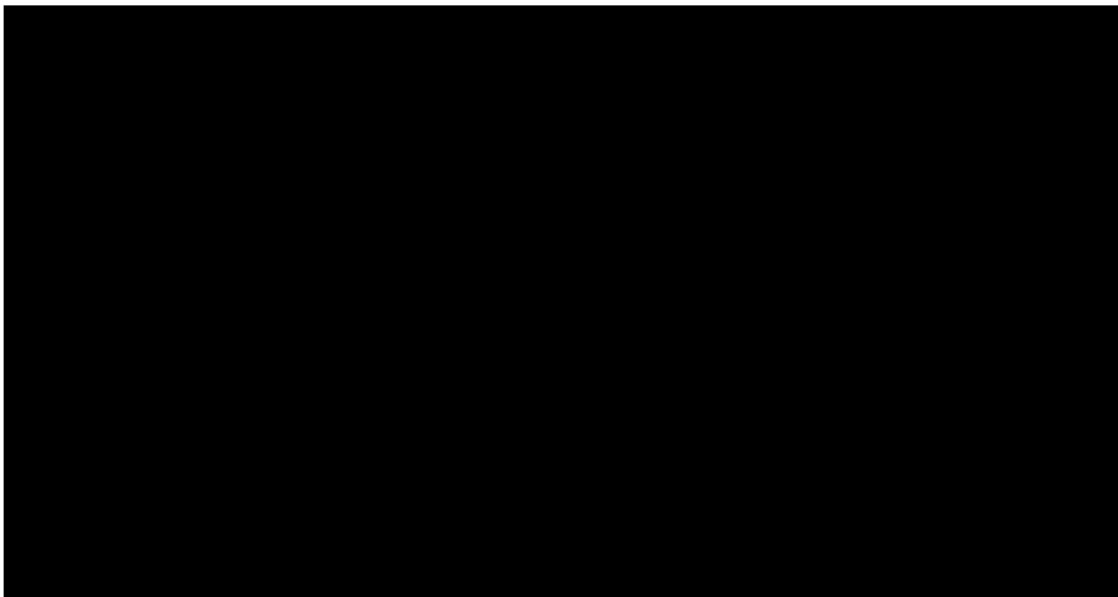
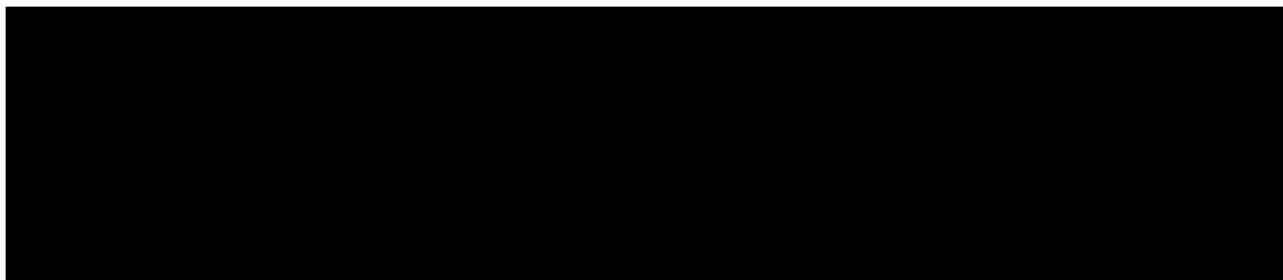


Figure 45

Figure 46

83. Further, the System Pump unit has an LED screen.



Similarly, the Column

Switching unit, the single and multi-wavelength detector units, the pH valve unit, and the Sample Pump unit all have LED screens external to the system housing.

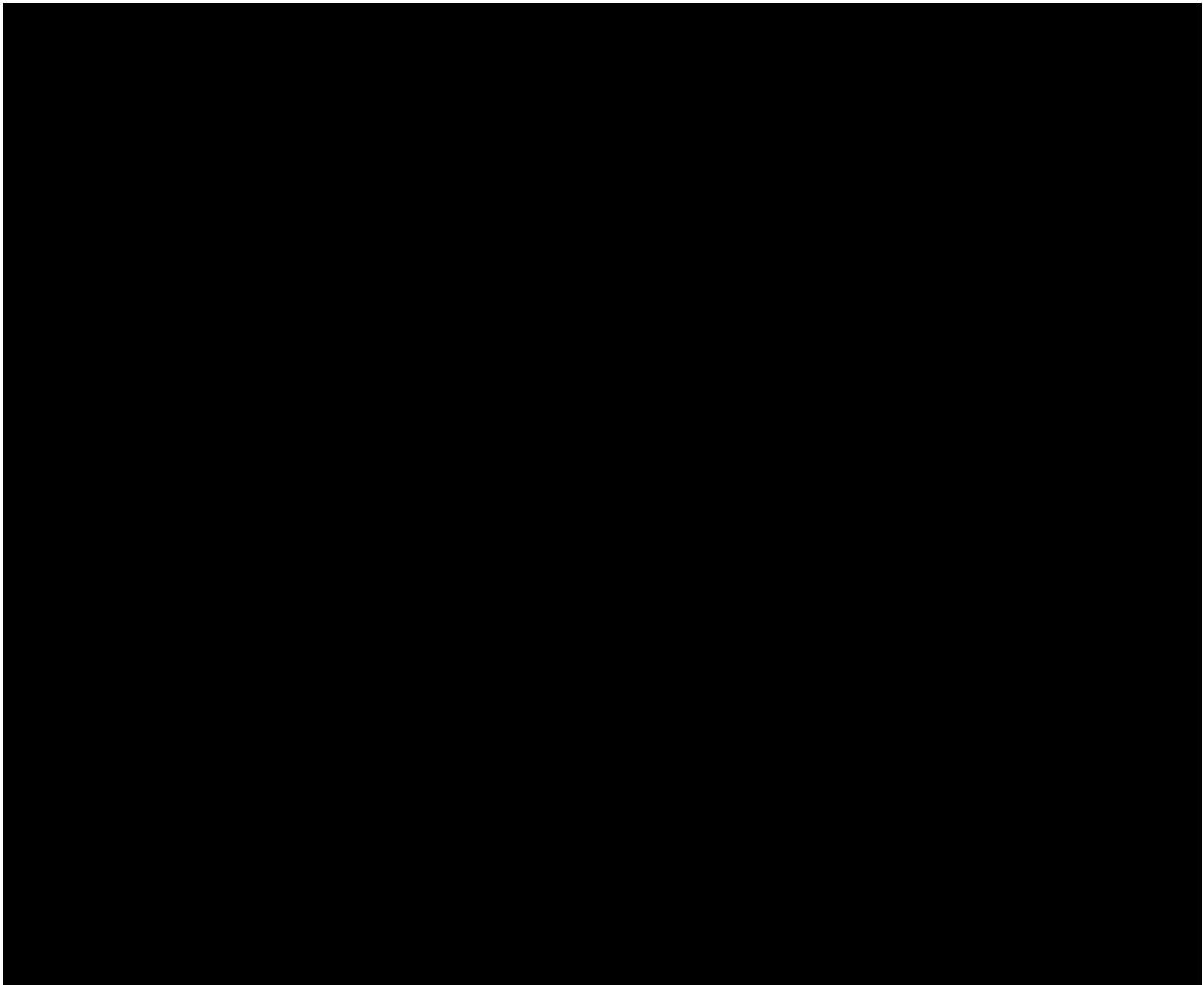


Figure 47

84. The "Buffer Blender valve," "Inlet Valve," "Outlet Valve," "Injection Valve," System Pump, Sample Pump, pH Valve, Blender, Column Switching, Mixer, Multi-Wavelength Detector, and Single Wavelength Detectors units all have LEDs. These LEDs are electronics components located outside the system housing because [REDACTED] and on the side of the [REDACTED] facing away from the system housing. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

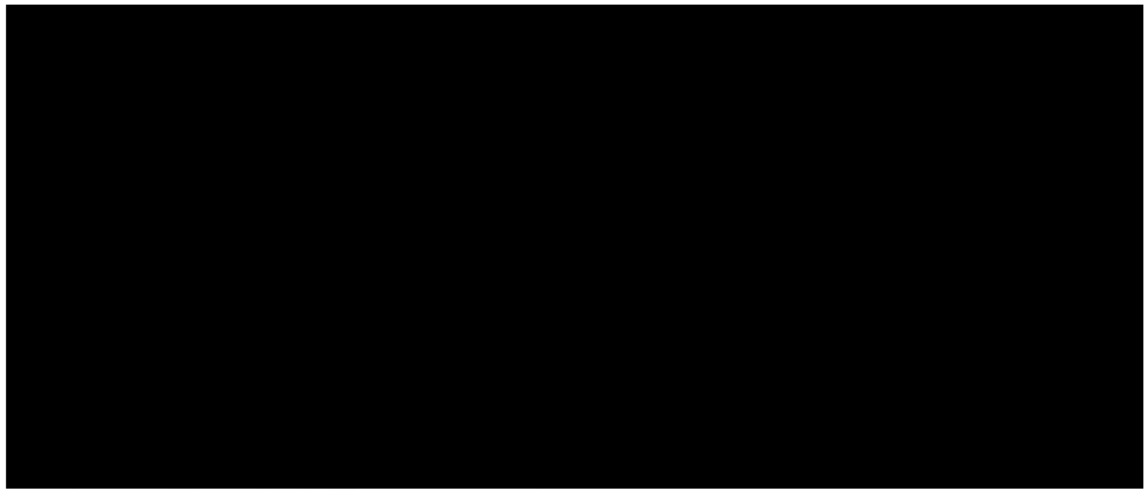


Figure 48

Figure 49

85. The opinions expressed in this declaration are my preliminary opinions based on my review to date of the evidence produced at this early stage of the case. My opinions are subject to change based on additional opinions that GE may present and information I may receive in the future. I reserve my right to amend or update my opinions as appropriate in response to any future developments regarding claim construction, including any court order on claim construction. With this in mind, based on the analysis I have conducted for the reasons set forth above, I have preliminarily reached the conclusions and opinions in this declaration.

86. At a hearing or trial I may use as exhibits various documents produced in this case that refer or relate to the matters discussed in this declaration. I have not yet selected particular exhibits that might be used. I may also rely on visual aids and may rely on analogies concerning elements of the '718 patent, the accused products, the prior art referenced in this declaration, or any related technologies. In addition, I may create or assist in the creation of certain demonstrative evidence to assist me in testifying, and I reserve the right to do so, such as demonstrations of devices and software to further support the positions in this declaration.

I declare under penalty of perjury that the foregoing is true and correct. Executed in

New York, on 4/14, 2014.

By


Peter King